



PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

BChydro 



Creel Survey of the Winter 1992/93 Gantahaz Lake Ice Fishery

A. R. Langston
April 1993

PWFWCP Report No. 71

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

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Website: www.bchydro.bc.ca/environment/initiatives/pwcp/

**This report has been approved by the Peace/Williston Fish and Wildlife
Compensation Program Fish Technical Committee.**

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A. McLean organized the creel survey and contract, acted as contract monitor, and reviewed the final report.

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INTRODUCTION

Gantahaz Lake supports a popular fishery, both conventional and ice fishing. This is due in part to a combination of angling success, accessibility, and relative close proximity to the town of Mackenzie.

The Mackenzie Fish & Game Association officially requested a brook trout stocking program for this lake in 1969. Shortly after this date, the Provincial Fish & Wildlife Branch initiated baseline research to ensure the suitability of Gantahaz Lake as a stocking candidate. A stocking program was initiated in 1976, the complete stocking history to date is as follows:

<u>Year</u>	<u>Species</u>	<u>Number</u>	<u>Year</u>	<u>Species</u>	<u>Number</u>
1976	brook trout	15,000	1985	brook trout	15,000
1978	brook trout	15,000	1986	brook trout	10,000
1979	brook trout	15,000	1987	brook trout	15,000
1980	brook trout	15,000	1988	brook trout	20,000
1981	brook trout	15,000	1989	brook trout	20,000
1982	brook trout	15,000	1990	brook trout	20,000
1983	brook trout	15,000	1991	brook trout	15,000
1984	brook trout	15,000	1992	brook trout	15,000

Gantahaz Lake is also known to contain populations of lake whitefish, and lake chub. Northern squawfish have been rumoured to exist in this lake. The presence of Northern squawfish was not observed, but was listed as "reported" in a Gantahaz lake survey conducted by Bustard and Janssen in 1970. Northern squawfish presence has not been confirmed, and all fisheries investigations to date have not verified their existence. A local angler provided 6 small fish he believed to be Northern squawfish, they were properly identified by Compensation staff as lake chub.

In the summer of 1992, the Peace Fisheries Compensation Program undertook an evaluation of the fisheries resources of Gantahaz Lake (McLean 1993). The presence of an egg-bound condition in some of the brook trout captured, and angler reports of poor angling success suggested a fish population in less than optimal condition. Brook trout, in spawning condition, congregate near the boat launch site every fall. In the absence of streams, brook trout will release their eggs in gravel shoals. An enhancement program consisting of spawning gravel addition to facilitate shore spawning was completed by Compensation Program staff in October 1992 to alleviate the egg-bound situation.

INTRODUCTION (Continued)

The 1992 evaluation of fisheries resources indicated that the stocking program appeared to be successful, however, total angler use, and catch per unit effort information needed to be assessed prior to any alterations of the current stocking program. In an effort to collect part of this information, a winter creel survey was conducted on Gantahaz Lake beginning December 20, 1992, and ending February 13, 1993. This survey was primarily aimed at determining angler use, and catch per unit effort over the winter period. A secondary objective was to evaluate the success of the gravel placement enhancement project.

STUDY AREA

Gantahaz Lake is situated within the municipal district of Mackenzie, approximately 160 km. north of Prince George (figures 1 & 2).

Lake Statistics: (Bustard and Janssen 1970)

Elevation:	716 m.	U.T.M.:	10.4909.61368
Latitude/Longitude:	55°22'50":123°08'40"	N.T.S. Map No.:	93-O6
Management Unit:	7-30		(edition 2)
Drainage:	Internal		
Surface Area:	40.1 ha.	Maximum Depth:	11.6 m.
Mean Depth:	4.3 m.		

Access to the lake is limited to one point at the boat launch site situated on the east shore of the lake (figure 2). The lake was accessible by two wheel drive vehicle through the entirety of the survey.

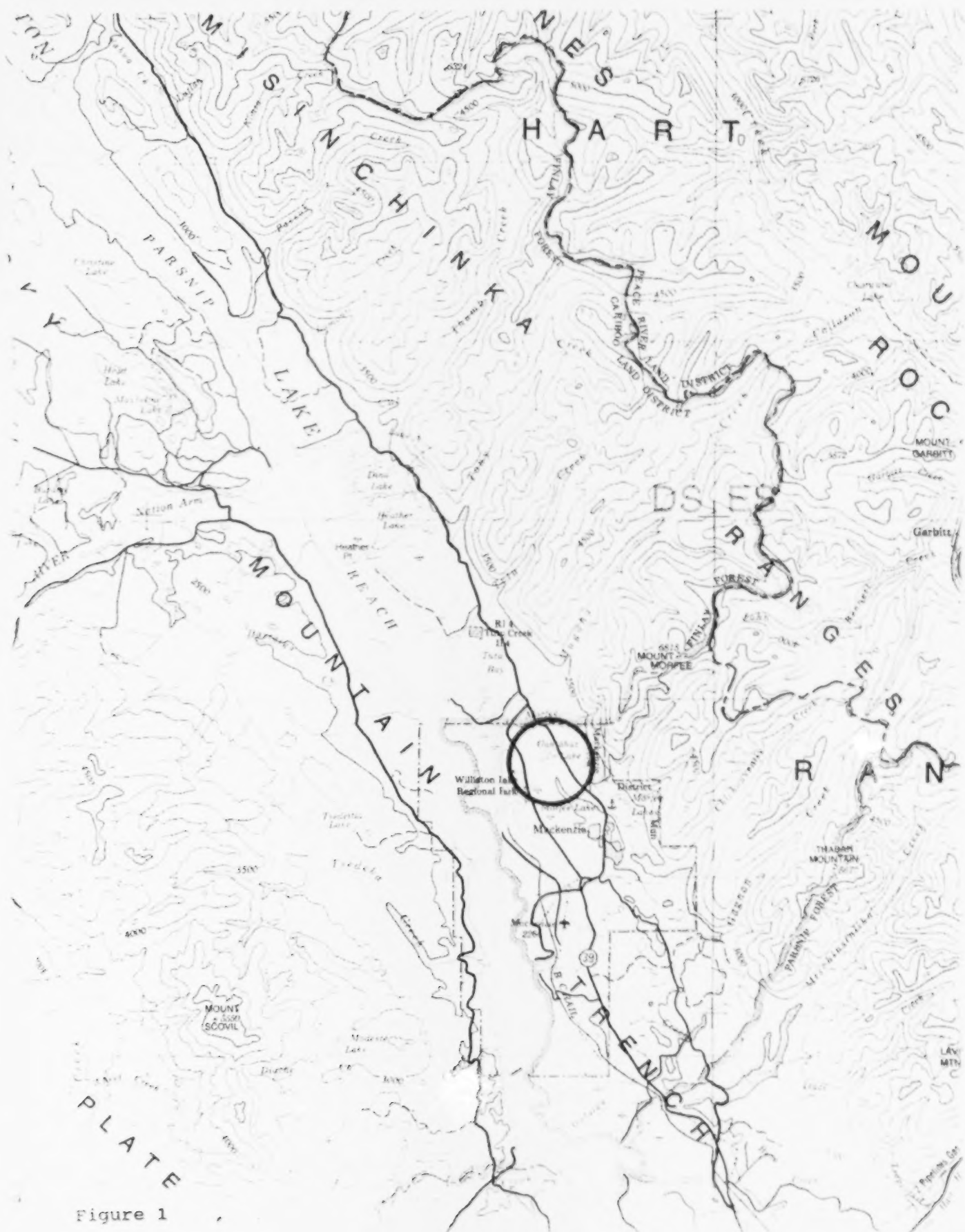
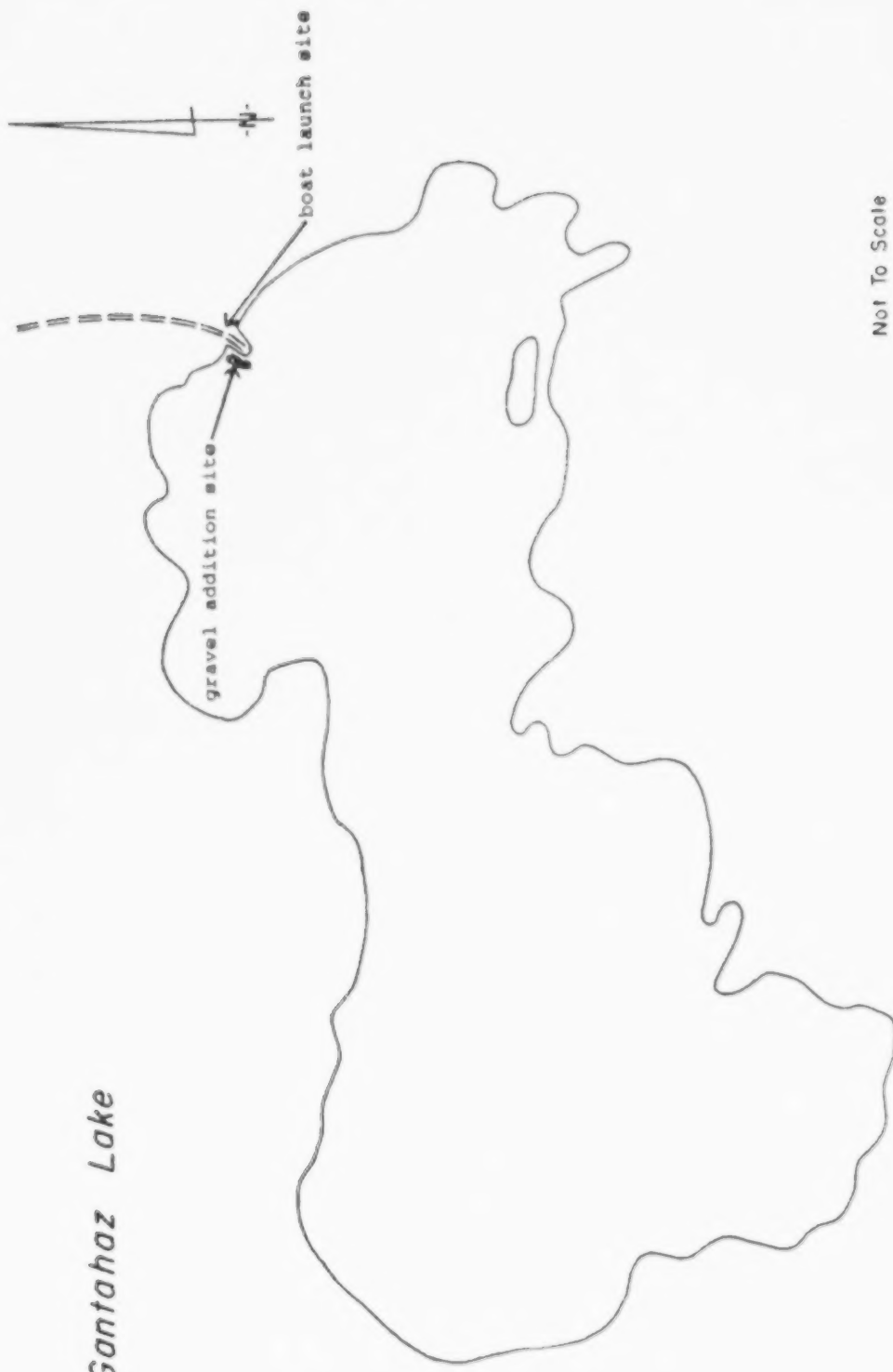


Figure 1

Gantahaz Lake



Not To Scale

Figure 2

METHODS

The winter, 1992/93, brook trout creel survey on Gantahaz Lake commenced December 17, 1992, and finished February 16, 1993. The survey took place during the daylight hours, (approx. 08:00 - 16:45) of 16, randomly selected dates. The dates of the 1992/93 Gantahaz Lake creel were:

December 1992	20, 22, 27, 30.
January 1993	3, 6, 11, 16, 17, 22, 28, 30.
February 1993	2, 6, 11, 13.

This survey utilizes a modified version of a double stratified, random sample, creel survey (four strata). According to Dixon (1986), in any given month, four replicates of each strata are required to provide a statistically sound estimate of angler effort and catch. This survey involves only two strata per one "month" period, weekends and weekdays/holidays. It was not necessary to divide a day into A.M. and P.M. strata as daylight hours were short enough to require only one shift of eight hours. A calendar indicating sampling dates, and identifying which days were weekdays (strata 1), and which days were weekends/holidays (strata 2), is presented in Appendix I.

This particular survey was conducted From mid December to mid February. To meet the requirements outlined by Dixon it was necessary to create two hypothetical one month blocks. The first "month" consisted of 31 days, commencing with December 17, 1992, and ending with January 16, 1993. The second "month" consisted of 31 days, commencing with January 17, 1993, and ending with February 16, 1993. The dates sampled in each "month" period were:

- 1) December 17 - January 16 (31 days) "Month 1"
December 20, 22, 27, 30.
January 3, 6, 11, 16.
- 2) January 17 - February 16 (31 days) "Month 2"
January 17, 22, 28, 30.
February 2, 6, 11, 13.

METHODS (continued)

All anglers observed by the creel clerks, were interviewed at the completion of their fishing trip. The following questions were asked:

1. Hours fished?
2. Angler origin (place of residence)?
 - Local - within 160 km. of the study area.
 - Resident of B.C.
 - Non-resident of B.C., but Canadian.
 - Non-Canadian.
3. Gear type?
 - B - bait, any gear with bait on it.
 - H - hardware, spoons, spinners, flashers, etc. (without bait)
 - F - fly, unbaited artificial fly with no spoons or flashers.
4. How many fish caught and kept (killed) and the species of fish?
5. How many fish caught and intentionally released, and the species of fish?
(*note- released does not include bites, or fish that break free.)
6. What do you consider to be the best time of year to ice fish on this lake?
7. What do you consider to be the best time of day to ice fish on this lake?
8. How would you rate this lake for ice fishing compared to other lakes in the Mackenzie area?
9. Why did you come here to fish today?

Results to questions one through five were statistically analyzed and compared with respect to the stratification (weekday vs. weekend), and month ("Month 1" vs. "Month 2").

Estimates of total fish harvest for "Month 1", "Month 2", and the entire survey period (December through February), were calculated utilizing statistical methodology outlined by B. Dixon (1986).

METHODS (continued)

Questions six through nine were designed to elicit generalized opinions from on site anglers to assess public sentiment towards the ice fishery, and to attain some local knowledge of the fishery.

Twenty three brook trout were biologically sampled during the creel survey. Information obtained included, fork length (cm.), weight (g.), sex, sexual maturity, and presence of parasites. General comments such as unusual appearance and presence/absence of spawnbound condition were also noted. Scale samples were taken from the preferred body location of the fish, left side, slightly above the lateral line, and on a line between the posterior insertion of the dorsal fin and the anterior insertion of the pelvic fin. Age determination was conducted by A. Langston, and verified by B. Blackman.

General weather conditions such as air temperature, and wind velocity were also recorded daily by the creel clerks.

RESULTS

The creel survey ran from December 17, 1992, to February 16, 1993. During this period, 84 anglers were observed, and interviewed by the creel clerks (Table 1). Due to the single access point, shape, and small size of the lake, 40.1 ha., all anglers were visible to the creel clerks. Any persons fishing were interviewed, therefore 100% of the anglers fishing on creel survey sample days were interviewed. The data obtained is therefore considered an accurate representation of actual angler effort and catch. The data collected by the creel clerks is presented in Table 1.

Table 1 - Data collected by creel clerks on the randomly selected survey dates

	DATES		
	"MONTH 1" DECEMBER 17 - JANUARY 16	"MONTH 2" JANUARY 17 - FEBRUARY 16	SURVEY PERIOD DECEMBER 17 - FEBRUARY 16
Anglers interviewed	17	67	84
Hours Fished	36.75	130.25	167
Released Catch	1	2	3
Killed Catch	8	19	27
Total Catch	9	21	30

Table 2 provides a breakdown of survey results by month (December, January, February) and the two strata employed, weekdays vs. weekends and holidays. This data is information that was collected only on the creel survey sample days, they are not estimates for the entire season. The statistically extrapolated values for all days of the survey, December 17 to February 16, are presented in Table 3.

Table 2 - Breakdown (by strata) of data collected by creel clerks on the randomly selected survey dates

	DECEMBER			JANUARY			FEBRUARY			SURVEY PERIOD
	wd	we	month	wd	we	month	wd	we	month	
Mean hours fished/angler	2.5	1.5	2	2.04	2.13	2.11	1.36	2.14	1.82	1.99
Fish harvested/angler	1	0	0.5	0.5	0.47	0.48	0.07	0.1	0.09	0.32
Total fish catch/angler	2	0	1	0.58	0.47	0.5	0.14	0.1	0.18	0.36
Catch/unit effort *	0.8	0	0.5	0.29	0.22	0.14	0.11	0.05	0.06	0.18

* C.P.U.E. expressed in "rod hours".

RESULTS (continued)

During the period of December 17, 1992, to February 16, 1993, an estimated 285 $\pm$ 108 anglers fished Gantahaz Lake for a total of 544 $\pm$ 157 hours (Table 3). The latter part of the survey, mid January to mid February ("Month 2") was the most popular with 219 anglers fishing for a total of 397 hours. The Catch per Unit Effort during this time was only 0.16 fish per rod hour. The period covered by "Month 1" was less busy with only 60 anglers fishing for a total of 143 hours. Although a less popular time, the Catch per Unit Effort was higher during "Month 1" at 0.27 fish per rod hour (Table 3). The estimated Catch per Unit Effort for the entire season was 0.20 fish per rod hour.

Table 3 - Predicted monthly and season totals of angler effort, and success. (95% C.I.)

	MONTHLY TOTALS		SURVEY TOTALS
	Dec. 17 - Jan. 16	Jan. 17 - Feb. 16	Dec. 17-Feb. 16
No. of Anglers	60	219	285 $\pm$ 108
Hours Angled	143	397	544 $\pm$ 157
Brook Trout Harvested	33	53	90 $\pm$ 52
Brook Trout Released	5	11	16 $\pm$ 17
Total Catch	38	64	106 $\pm$ 52
Catch Per Unit Effort*	0.27	0.16	0.20 $\pm$ 0.15

* Catch per unit effort expressed in fish per rod hour

Table 4 presents estimates of mean angler day length, mean angler harvest, mean angler release rate, and total catch per angler day. The average length of an angler day was highest during "Month 1" at 2.38 hours, and lower during "Month 2" at only 1.81 hours. The season average angler day was 1.91 hours. Success rate, as seen in the catch per unit effort values contained in table 3, was also highest during "Month 1" at 0.63 fish per angler day (Table 4), and lowest during "Month 2" at 0.29 fish per angler day. The estimated success rate for the season was 0.37 fish caught per angler day. The low values for brook trout release are indicative of a consumptive fishery where only the very small fish are released.

Table 4 - Mean angler day length, and success rate.

	WINTER 1992/93		SURVEY AVERAGE
	Dec. 17 - Jan. 16	Jan. 17-Feb. 16	Dec. 17 - Feb. 16
Mean Angler Day Length (Hrs.)	2.38	1.81	1.91
Mean Angler Harvest	0.55	0.24	0.32
Mean Angler Release	0.08	0.05	0.06
Total Catch Per Angler Day	0.63	0.29	0.37

RESULTS (continued)

Brook trout caught during the creel survey averaged 37.6 cm in length, and 636 g in weight. The lengths of the 23 fish sampled are presented in figure 3. To simplify figure 3, all lengths were rounded up to a whole number.

Gantahaz Lake Brook Trout Length Frequency

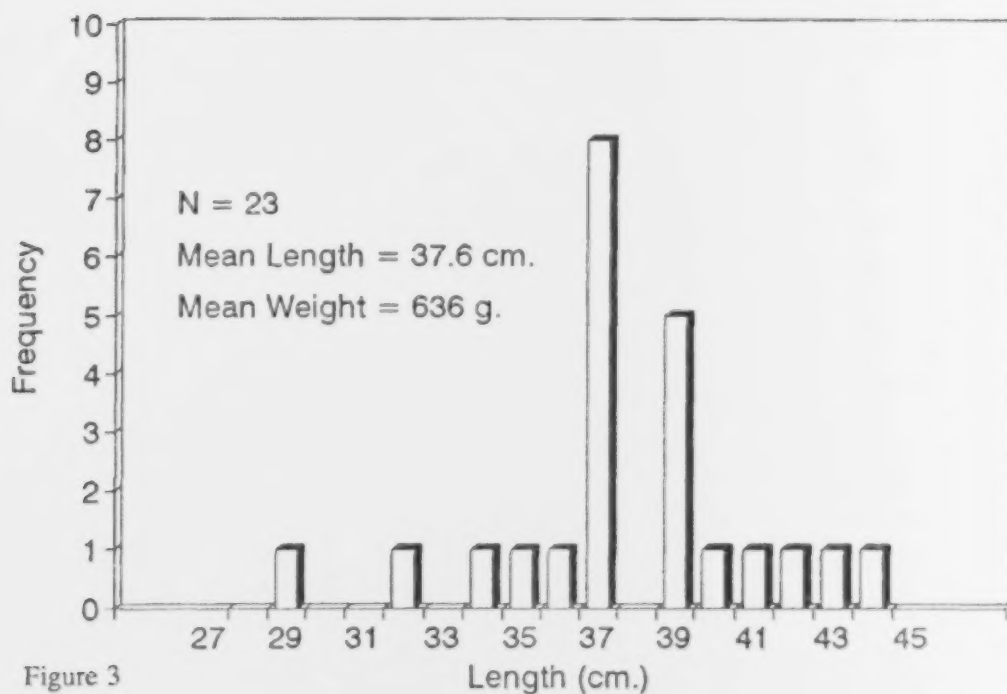


Figure 3

Data sheets indicating fish length, weight, and age are presented in Appendix II. Information such as angler response to questions, gear used etc. has been included in Appendix III. This includes the field notes taken by the creel clerks.

DISCUSSION

From December 17, 1992, to February 16, 1993, 84 anglers were interviewed on 16 randomly selected days. The angling effort totalled 167 hours, with a total catch of 30 brook trout. This represents 100% of the angler effort and success for the 16 days that interviews were conducted. This information was extrapolated to predict the angler effort, and success for the entire study period.

An estimated 285 $\pm$ 108 anglers fished for 544 $\pm$ 157 hours, and caught 106 $\pm$ 52 brook trout during the two month study period. Of the estimated 106 fish caught, 16 were released, while 90 were harvested, a release rate of 15%, and a harvest rate of 85%.

The catch per unit effort (fish/rod hour) for "Month 1", "Month 2", and the survey period (Dec. 17 - Feb. 16) were 0.27, 0.16, and 0.20 respectively. This resulted in a estimated harvest (kill) for "Month 1", "Month 2", and the survey period of 33, 53, and 90 fish respectively. The catch per unit effort for the season of 0.20 fish per rod hour is comparable to Cobb Lake. Cobb Lake (66 km. West of Prince George) is another popular northern ice fishing lake containing stocked brook trout. Creel surveys conducted on this lake indicate catch per unit efforts of 0.30 in 1986 (Euchner T. 1986), 0.24 in 1987 (Euchner 1987), and 0.156 in 1988 (Labach M. 1988).

Twenty three fish were sampled during the creel survey, no incidence of an egg-bound problem was noted. Scale analysis of the brook trout sampled during the survey indicated all fish were at least 3 years of age, with the largest fish being 6 years of age. A fisheries evaluation study of Gantahaz Lake (McLean 1993) indicated that brook trout were not maturing until age 3 and at a length of approximately 31 cm. All but one of the fish sampled during this creel survey were larger than 31 cm., and all were at least 3 years of age. This would suggest that all of the 23 sampled fish were sexually mature. The degree of the egg-bound incidence present is not possible to determine through angling as egg-bound fish are often reluctant to take a lure. Determining if the gravel placement for spawning purposes was successful will likely only be possible through a netting program. A check of the enhancement area (gravel shoal) will be undertaken in the Spring of 1993 to locate eggs in order to assess the success of the enhancement project. The mean length of the brook trout sampled was 37.6 cm (range 29.0 cm - 43.5 cm), a respectable size for a small lake fishery. The mean weight of the brook trout sampled was 636 g (range 312 g - 1,134 g), also a size appreciated by anglers. Coupling the mean weight of fish caught with the estimated harvest rate indicates that over the course of the two month creel survey period approximately 57.24 kg of fish were harvested from Gantahaz Lake.

DISCUSSION (continued)

The data indicates that effort was highest in the latter part of the season ("Month 2"), but the success rate was lowest at this time. The seasonal catch per angler day was 0.37 fish.

"Month 2" success rate was only 0.29 fish per angler day, while "month 1" success rate was significantly higher at 0.63 fish per angler day. This would suggest that in general, the earlier part of the ice fishing season is the most successful. No reasons for this occurrence were identified, or examined. Interestingly, anglers fishing on weekdays tended to have more success than weekend/holiday anglers. One may speculate that less experienced fishermen angled on weekends/holidays and were less "serious" in their efforts, while only the knowledgeable, experienced anglers fished on weekdays.

During the period of December 27, 1992 to mid January 1993, the air temperature was predominantly in the -20 °C. to -30 °C. range. This likely reduced angling use and the total season harvest. Periods of very low temperatures are a common occurrence during the winter in the Mackenzie area. The creel survey season results are likely indicative of any given year as a cold snap is expected every winter. If the weather had proven to be unusually mild, an artificially high angler effort, and resulting increased harvest would likely occur.

Most anglers were residents of the Mackenzie area (Local), although 2 residents of Alberta (Non-Residents), and 2 B.C. residents (Residents), were interviewed. Angler comments from the interviews were varied, however a few points were commonly raised. Bait was used by all fishermen, one angler also used a fly successfully. Most anglers enjoyed the fact that the lake was so close to Mackenzie, and although most claimed that if a person was "serious" about catching a fish they would fish other lakes, they stated that this was a good place to bring the family, and a satisfactory fishery. Six anglers indicated that this was a lake of choice simply because it contained brook trout as opposed to rainbow trout. A few anglers felt there was a problem with anglers snagging large spawning fish in October near the boat launch where spawning gravel was added. This occurrence has not been confirmed by the local conservation officers.

The ice fishery on Gantahaz Lake, in general, appears to be satisfactory with the local anglers of Mackenzie. Although some feel their success rate is not very good, they feel the location of the lake, and the size and quality of the fish caught, compensates for a low catch per unit effort. It should be noted that the catch per unit effort is merely perceived to be low by local anglers. The catch per unit effort in Gantahaz is comparable to that of Cobb Lake, and likely on par with Northern B.C. brook trout lakes (D. Ableson, Omineca Regional Fisheries Biologist, pers. comm.). The results of this creel survey, coupled with the results of the Fisheries Evaluation study conducted during the summer of 1991, indicate a successful stocking program and management plan has been developed for Gantahaz Lake.

LITERATURE CITED

- Bustard and Janssen, 1970. Lake survey data Gantahaz Lake. B.C. Fish and Wildlife Branch, Prince George, B.C. Unpublished data.
- Dixon, B.M., 1986. Introduction for a double stratified random sample creel survey (four strata). B.C. Fish and Wildlife Branch, Prince George, B.C. 46 pp. Unpublished Report.
- Euchner, T., 1986. Cobb Lake creel survey. B.C. Fish and Wildlife Branch, Prince George, B.C. 17 pp. Unpublished Report.
- Euchner, T., 1987. Creel survey of the winter 1986/87 Cobb Lake brook trout ice-fishery. B.C. Fish and Wildlife Branch, Prince George, B.C. 13 pp. Unpublished Report.
- Labach, M.G., 1988. Cobb Lake creel survey. B.C. Fish and Wildlife Branch, Prince George, B.C. 15 pp. Unpublished Report.
- McLean, A.R., 1993. A fisheries evaluation of Gantahaz Lake. Peace Fisheries Compensation Program. Prince George, B.C. 17 pp. Unpublished Report.

APPENDIX I

(sampling dates)

DECEMBER 1992

SUN	MON	TUE	WED	THUR	FRI	SAT
		1	2	3	4	5*
6*	7	8	9	10	11	12*
13*	14	15	16	17	18	19*
20*	21	22	23	24	25*	26*
27*	28	29	30	31		

JANUARY 1993

SUN	MON	TUE	WED	THUR	FRI	SAT
					1*	2*
3*	4	5	6	7	8	9*
10*	11	12	13	14	15	16*
17*	18	19	20	21	22	23*
24*	25	26	27	28	29	30*
31*						

FEBRUARY

SUN	MON	TUE	WED	THUR	FRI	SAT
	1	2	3	4	5	6*
7*	8	9	10	11	12	13*
14*	15	16	17	18	19	20*
21*	22	23	24	25	26	27*
28*						

* - denotes weekend days, or statutory holidays.
 Shaded blocks are creel survey sampling/interviewing dates.

APPENDIX II
(fish sample data sheets)

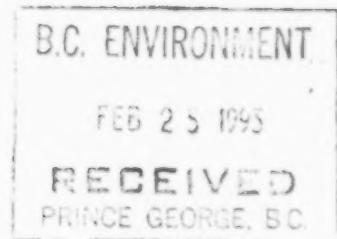
Species	Length(cm.)	Weight (g.)	Age (years)	Comments
Brook trout	29.0	312	3	not egg-bound
Brook trout	32.0	369	3	"
Brook trout	34.0	482	3	"
Brook trout	34.5	425	3	"
Brook trout	36.0	539	3	"
Brook trout	36.5	539	4	"
Brook trout	37.0	652	4	"
Brook trout	37.0	567	4	"
Brook trout	37.0	482	4	"
Brook trout	37.0	652	4	"
Brook trout	37.0	624	5	"
Brook trout	37.0	624	5	"
Brook trout	37.0	709	5	"
Brook trout	38.5	738	5	"
Brook trout	39.0	709	5	"
Brook trout	39.0	709	6	"
Brook trout	39.0	624	5	"
Brook trout	39.0	624	5	"
Brook trout	39.5	596	5	"
Brook trout	41.0	738	5	"
Brook trout	42.0	909	6	new eggs forming
Brook trout	42.5	879	6	not egg-bound
Brook trout	43.5	1134	5	"

APPENDIX III
(creel clerk field notes)

GANTAHAZ LAKE WINTER CREEL SURVEY

1992 / 1993

Linda J. Murray



The 1992/1993 Gantahaz Lake winter creel survey was carried out on 16 scheduled days beginning December 20, 1992 and finishing February 13, 1993. During this period, a total of 84 anglers ice fished on the lake. Three fish were caught one night after I had left. These fish were recorded under total catch, but no further information was available. Of the 23 fish whose length and weight were recorded, census takers were able to obtain scale samples and determine (through gut analysis) whether the trout were in spawn bound condition for all but two of the fish. None of the fish sampled were found to be spawn bound.

Methods

Either myself or Erin Rogan remained at the Gantahaz Lake boat launch from approximately 08:15 hrs until dark. Each angler was asked the following questions:

- 1) What do you consider to be the best time of year to ice fish in this lake?
- 2) What do you consider to be the best time of the

day to ice fish on this lake?

3) How would you rate this lake for ice fishing compared to other lakes in the Mackenzie area?

4) Why did you come here to fish today?

Each angler's response to the interview was recorded. Any other comments and suggestions made by the anglers were also noted. An entry on the creel sheet was made for every angler completing a fishing trip. Weather conditions and any other useful information was recorded for each survey day.

The length and weight of each fish caught while the census taker was in attendance was recorded. Scale samples were collected and placed into scale envelopes. All fish data was recorded on the scale envelopes and on the creel survey sheets. Fish were examined (gut analysis) to determine if they were in spawn bound condition.

Angler Interviews

All the anglers were quite approachable and willing to answer questions. Gantahaz Lake seems to be the most popular local lake for ice fishing if anglers only want to fish for an hour or two, or as an ice fishing outing with the family. Some anglers come here because deep water and springs (making ice unsafe) deter them from ice fishing on Morfee Lake. Some also state that fishing is usually better at Gantahaz Lake than Morfee Lake.

Virtually all who mentioned that they came to Gantahaz Lake because of the species said fishing here was reasonably good, and that they came here because of what they could catch. They agreed that it was undoubtedly convenient, but their main motivation was the species. Several of these people mentioned that brook trout fishing is inherently a hit-and-miss thing and were not discouraged by a lack of success.

Most of the anglers who did not specify that they came to Gantahaz Lake because of the species felt that the ice fishing is poor this year. Several anglers were willing to discuss this at length and said that fishing has declined here over the last few years. Anglers claim that about five years ago you could pull out your limit. Since then ice fishing has gone downhill, this year being the worst so far. People have offered 2 reasons for this (depending on who you ask).

Some think that there is too much food in the lake to make the fish take bait. Others feel that the lake is being fished out. Two anglers suggested that the season be closed during spawning because they claim that people come down to the boat launch (and the far end of the lake), put triple hooks on and snag over limits of fish. One discouraged gentleman from the Mackenzie Rod and Gun Club said that he has caught two fish at the lake this winter, and none between mid-January and February 6, but has put in at least 10 hours a week during that period of time.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

B.C. ENVIRONMENT

FEB 23 1993

RECEIVED
PRINCE GEORGE, B.C.

page 1 of 1

Date: Dec 20/92

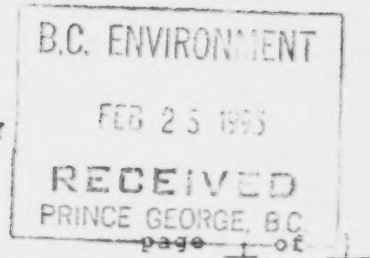
Location: Boat launch site

Creel Clerk: E. Brown

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	1.5	L	B	Nil	Nil	Nil	/
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT
Lake white fish - LWF

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



Date: Dec 22 1992

Location: Boat launch site

Creel Clerk: S. Rogers

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel.	Total Catch	Len/wght for each fish killed
1	2.5	L	B	1-BT			38.5 cm/738g.
2					1-BT		8cm/57g.
3							
4							
5							
6							
7							
8							
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10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

**GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93**

B.C. ENVIRONMENT page 1 of 1

FEB 25 1993

RECEIVED
PRINCE GEORGE BC

Date: Feb 25 1993

Location: Boat launch site

Creel Clerk:

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT
Lake white fish - LWF

GANTHAZ LAKE
WINTER CREEL SURVEY
1992/93

page 1 of 1

Date: Dec 30 1992

Location: Boat launch site

Creel Clerk: A. Allen

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel. Catch	Total Catch	Len/wght for each fish killed
1	No	Anglers					
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

GANTAHAZ LAKE ENVIRONMENT
WINTER CREEL SURVEY
1992/93

FEB 25 1993
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PRINCE GEORGE, B.C. Page 1 of 1

Date: Jan 3 93 08:15 - 16:15

Location: Boat launch site

Creel Clerk: L. M. [unclear]

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel.	Total Catch (indicate species)	Len/wght for each fish killed
1	1.5	L	B			2	
2	1.5	L	B			2	
3	1.15	L	B			2	
4	2.0	L	B			2	
5	2.0	L	B			2	
6	0.45	L	B			1	
7	0.45	L	B			1	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT
Lake white fish - LWF

Gantahaz Lake Creel Survey

January 3, 1993

Weather: Light snow and strong gusting northerly winds.
Temperature -15 C

Angler interview 1:

chances of catching fish are the same throughout the winter, but prefers to fish from March until the ice softens because the weather is nicer, and there are more people out fishing.

fishing is sporadic, ie may catch 3 in half an hour, and then nothing.

Angler interview 2:

chances of catching fish are the same throughout the winter, fishing is sporadic (you either do well, or catch nothing), this lake is a convenient place to fish with the family, would not fish here if went out to do serious fishing.

Angler interview 3:

fishing is best in very early winter and in late winter. the fishing is good for a stocked lake this is a convenient place to fish with the family, would not fish here if went out to do serious fishing.

Angler interview 4:

chances of catching fish are the same throughout the winter. fishing is sporadic, however you tend to do best first thing in the morning, and then again in the mid-afternoon. this is a convenient place to fish with the family.
- would not fish here if went out to do serious fishing.

Angler interview 5:

fishing is best in very early winter and in late winter, this is a convenient place to fish with the family. would not fish here if went out to do serious fishing.

Angler interview 6 and 7:

same response as "angler interview 5".

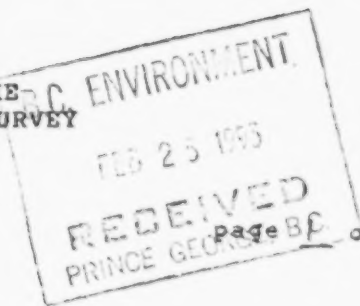
NOTES:

there were 6 children and 2 other adults with the various anglers.

6 snowmobilers used the lake during the course of the day, but did not fish.

1 vehicle came down to the lake, and left after a moment. all anglers were interviewed.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



Date: Jan 6 / 1993 08:15 - 16:15

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel.	Total Catch	Len/wght for each fish killed
1	3.5	L	B			2	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
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16							
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18							
19							
20							

Brook trout - BT
Lake white fish - LWF

Gantahaz Lake Creel Survey

January 6, 1993

Weather Clear skies no wind.
 Temperature -28 C

Angler interview 1:

chances of catching fish are the same throughout the winter.
when the fish are biting it is a good lake.
the fish are a nice size.
this lake is a convenient place to fish in the mornings after
working graveyards.
would not fish here if went out to do serious fishing.

NOTES

- 1 vehicle came down to the lake and left after a moment
- all anglers were interviewed.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

B.C. ENVIRONMENT

FEB 23 1993

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PRINCE GEORGE, B.C.

page 1 of 1

Date: January 11/93 08:15 - 10:15

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel. Catch	Total Catch	Len/wght for each fish killed
1	1.5	L	B			0	
2	1.5	L	B			0	
3	2.5	NR	B	1	0	1 Bt	34 cm 539 g
4	2.5	NR	B	3	0	3 Bt	32 cm 397 g
5							37 cm 624 g
6							41 cm 138 g
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

Gantahaz Lake Creel Survey

January 11, 1993

Weather: Clear skies, low wind
Temperature -15 C

Angler interview 1:

- ice fishing is best early in the winter.
fishing is alright for such a convenient place to fish.
would fish elsewhere if planning to spend a day seriously fishing.

Angler interview 2:

- ice fishing is best early in the winter, and again towards spring.
this is a convenient place to fish if you only have an hour or two to fish.
would fish elsewhere if planning to spend a day seriously fishing.

Angler interview 3:

angler is from Alberta, and cannot offer opinion on this lake

Angler interview 4:

angler is from Alberta, and cannot offer opinion on this lake

NOTES:

two of the fish were frozen and could not be checked to see if they were spawn bound.

my waterbottle fell over, and I was unable to get scale samples from the two frozen fish.

7 people (2 snowmobiles) used the lake for snowmobiling.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

B.C. ENVIRONMENT

page 1 of 1

FEB 25 1993

RECEIVED
PRINCE GEORGE, B.C.

Date: Jan 16/93 CS15-1615

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	1	L	B			0	
2	5	L	B			0	
3	5	L	B	3	0	3 BT	32 cm 319 g
4							36 cm 537 g
5							32 cm 624 g
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

Gantahaz Lake Creel Survey

January 16, 1993

Weather: Overcast; very light snow; low wind
Temperature -24 C

Angler interview 1:

- January is the best month to ice fish.
- fishing is best towards dusk.
- fishing isn't very good in this lake.

Angler interview 2:

- the coldest months make for the best fishing, therefore fishing is best in late December, January and February.
- it is best to fish in early morning when it is colder than -30 C.
- fishing in this lake is not very good, but if you want to fish for Brook Trout, then you come here.

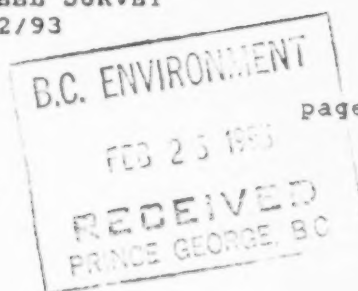
Angler interview 3:

- fishing is best in the early winter, but it is OK all winter.
- fishing is best in the early morning.
- if you want to fish specifically Brook Trout, then it is a good lake.

NOTES:

- all anglers were interviewed.
- 3 people came down for a walk on the ice.
- 3 snowmobiles and 1 truck used the lake.
- 2 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



page 1 of 1

Date: Jan. 17/93 0815 - 1730

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel. Catch	Total Catch	Len/wght for each fish killed
1	2.75	L	B			0	
2	1.5	L	B			0	
3	1.5	AR	B			0	
4	2.0	L	B			0	
5	2.0	L	B			0	
6	2.0	L	B			0	
7	2.0	L	B			0	
8	1.5	L	B			0	
9	1.5	L	B			0	
10	1.0	L	B			0	
11	4.5*	L	B	3 Br	0	3 Br	
12	3.5	L	B	2 Bt	0	2 Br	51 cm 567 g
13							39 cm 709 g
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

* see next page

January 17, 1993 (con't)

Angler interview 9:

- fishing is best in the morning.
- fishing is very slow - you don't catch enough
- this is a convenient place to come for a few hours.
- would not fish here if planning to spend a day seriously fishing.

Angler interview 10:

- fishing is best during mid-winter.
- fishing is best at dawn and at dusk.
- fishing is sporadic.
- fishing is better here than at Morfee Lake, however other lakes are better.
- this is a convenient place to come, otherwise would go to other lakes north of town.

Angler interview 11*:

- fishing is best 2 weeks after freeze-up.
- fishing is best in the early morning and in the evening.
- fishing is very good in this lake.
- these fish are the best for eating.

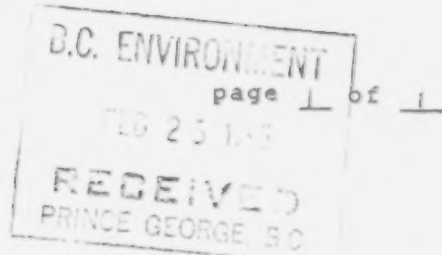
Angler interview 12:

- fishing is OK all winter.
- fishing is best just before dark.
- fishing is average in this lake compared to other local lakes.
- fishing is good if you want to fish for Brook Trout.
- this is a convenient place to fish.
- would like to see fishing closed in this lake during spawning because people sit at the boat launch and pull out all the big spawners which you can't eat anyway because they are too soft.

NOTES:

- all anglers were interviewed.
- Angler # 11 walked to the far end of the lake and said he would not return until well after dark. As of 16:00 hrs (3 hrs fishing) he had caught nothing. I left at 17:30 hrs and he still hadn't returned. I spoke with him the next survey day and he did eventually catch 3 fish.
- 3 people came down for a walk on the lake.
- 10 snowmobiles used the lake.
- 6 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



Date: Jan 22 /93 0815 - 17:00

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	2	L	B	1	0	1 B+	43.5 cm 1134 g
2	2	L	B	1	0	1 B+	42 cm 907 g
3	2.5	L	B			0	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

Gantahaz Lake Creel Survey

January 22, 1993

Weather: Mostly clear in morning; light overcast in afternoon; low
wind
Temperature -10 C

Angler interview 1:

- fishing is best as soon as the ice freezes in early winter.
- fishing is best before 11:30 hrs and again as it gets dark.
- fishing in this lake is pretty good.

Angler interview 2:

- fishing is best as soon as the ice freezes up and in late winter (March).
- fishing is best early and late in the day.
- fishing is very slow in this lake.
- this is a convenient place to fish if you only have a couple of hours.

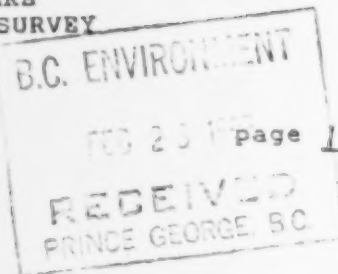
Angler interview 3:

- this is his first year ice fishing and his third time out - all trips have been to this lake.
- thinks that perhaps fishing is best late in the day.
- this is convenient place to fish.
- none of his three trips to this lake have produced fish.

NOTES:

- all anglers were interviewed.
- 1 person came down to the lake to cross-country ski.
- 6 snowmobiles used the lake.
- 5 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



Date: Jan 28, 1993 09:15 - 16:15

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	0.75	L	B	♀	1 Sr	1 Sr	
2	2.0	L	B	-	-	♀	
3	1.25	L	B	-	-	♀	
4	2.5	L	B	-	-	♀	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT
Lake white fish - LWF

Gantahaz Lake Creel Survey

January 28, 1993

Weather: Cloudy; no wind.
Temperature -15 C

Angler interview 1

- has Ice fished 8 times, all this year on this lake.
- fishing is good in the spring - just after the ice is off the lake.
- fishing is best between 8:00 and 10:00 am and between 4:00 and 5:00 pm
- this is a convenient place to fish.

Angler interview 2

- this angler has been interviewed by me during a previous session.

Angler interview 3

- chances of catching fish are the same all winter.
- fishing is best in the morning.
- fishing is fair compared to other lakes.
- this is a convenient place to come for a few hours and has road access.

Angler interview 4

- this angler has been interviewed by me during a previous session.

NOTES:

- all anglers were interviewed.
- 2 people came down for a walk.
- 4 snowmobilers used the lake.
- 4 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

B.C. ENVIRONMENT

FEB 20 page 1 of 1

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PRINCE GEORGE, BC.

Date: Jan 30, 1993

0815 - 1645

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	2.0	L	B	-	-	Ø	
2	2.0	L	B	1	Ø	1 Bt	37 cm 709 g
3	0.75	L	B	-	-	Ø	
4	3.0	L	B	-	-	Ø	
5	3.0	L	B	-	-	Ø	
6	1.5	L	B	-	-	Ø	
7	1.5	L	B	-	-	Ø	
8	1.5	L	B	-	-	Ø	
9	1.25	L	B	-	-	Ø	
10	5.5	L	B	5	Ø	5 Bt	29 cm 312 g
11							37 cm 652 g
12							39 cm 624 g
13							39 cm 482 g
14							37 cm 482 g
15	4.75	L	B	3	Ø	3 Bt	37 cm 652 g
16							34.5 cm 425 g
17							36.5 cm 539 g
18	1.0	L	B	-	-	Ø	
19	1.0	L	B	-	-	Ø	
20	1.0	L	B	-	-	Ø	

Brook trout - BT
Lake white fish - LWF

Gantahaz Lake Creel Survey

January 30, 1993

Weather: Overcast; moderate wind; approximately 10 cm of slush and water covers the ice surface, therefore exceedingly wet.

Temperature 5 C

Angler interview 1:

- this angler has been interviewed by me during a previous session.

Angler interview 2:

- it doesn't matter when during the winter you fish, you just have to hit it right (sporadic).
- fishing is best in the morning.
- fishing on this lake has been good in the past, but it is slow this year.
- this is a convenient place to fish.

Angler interview 3:

- fishing is best as soon as ice is on the lake,
- fishing is best in the morning and at dusk.
- fishing is excellent on this lake.
- this is a convenient place to fish.

Angler interview 4:

- fishing is alright all winter.
- fishing is best just before dawn.
- this is a convenient place to fish.

Angler interview 5:

- fishing is best in the spring when the light penetrates the ice,
- fishing is best in the morning and at dusk.
- fishing is slow,
- this is a convenient place to fish.
- you come here if you want Brook trout (very good eating).

Angler interview 6:

- first time ice fishing in 25 years, so no opinion about this lake,

Angler interview 7:

- new to town and hasn't ice fished here before, so no opinion.

January 30, 1993 Con't

Angler interview 8:

- fishing is best whenever the temperature is near freezing.
- fishing is best in the morning.
- this is a good place to bring the family and pets.

Angler interview 3:

- anytime of the winter is OK for fishing.
- fishing is best in the morning.
- fishing isn't as good as in some lakes, but if you want Brook trout, you come here.
- this is a convenient place to fish, and has easy toad access.
- recommends that the season be closed during spawning because people pull too many out at the boat launch.

Angler interview 10:

- this angler has been interviewed by me during a previous session.

Angler interview 11:

- fishing is best early in the winter.
- fishing is best in the morning.
- fishing is good in this lake.
- this is a convenient place to come and has good access.

Angler interview 12:

- it makes no difference when during the winter you fish.
- fishing is best in the afternoon,
- you come to this lake if you want Brook trout.

Angler interview 13:

- fishing is best in the late winter.
- fishing is best in the morning and at dusk, but it is sporadic.
- this is a convenient place to bring the kids.

Angler interview 14:

- this angler has been interviewed by me during a previous session.

NOTES!

- all anglers were interviewed.
- 2 people came down to the lake for a walk.
- 4 snowmobilers used the lake,
- 6 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

B.C. ENVIRONMENT page 1 of 1

Date: Feb 2/93 08:15 - 16:30

FEB 23 1993

Location: Boat launch site

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PRINCE GEORGE, B.C.

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed (indicate species)	No. Rel.	Total Catch	Len/wght for each fish killed
1	1.0	L	B	1 Bt	1 Bt	2 Bt	39 cm 709 g
2	3.0	L	B	-	-	0	-
3	3.0	L	B	-	-	0	-
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

Gantahaz Lake Creek Survey

February 2, 1993

Weather: Overcast; some light snow; moderate wind; ice surface is a sheet of ice (slush from previous session turned into water and froze), and it is VERY slippery.
Temperature 0 C

Angler interview 1:

- this angler has been interviewed by me during a previous session.

Angler interview 2:

- this angler has been interviewed by me during a previous session.

Angler interview 3:

- first year ice fishing.
time of day doesn't seem to matter.
- this is a convenient place to fish.
- this angler has been coming here for a couple of hours 2 - 3 times 3 week this winter and has not caught anything yet.

NOTES:

- all anglers were interviewed
- 1 snowmobile used the lake.

GANTAHAZ LAKE ENVIRONMENT
WINTER CREEL SURVEY
1992/93

RECEIVED
PRINCE GEORGE, BC

page 1 of 1

Date: Feb 6/93 08:15 - 18:00

Location: Boat launch site

Creel Clerk: L. Murray

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel. (indicate species)	Total Catch	Len/wght for each fish killed
1	2.5	L	B	-	-	0	
2	2.5	L	B	-	-	0	
3	4.0	L	B	-	-	0	
4	2.0	L	B	-	-	0	
5	2.0	L	B	-	-	0	
6	0.25	L	B	-	-	0	
7	1.25	L	B	-	-	0	
8	1.75	L	B	-	-	0	
9	1.75	L	B	-	-	0	
10	3.5	L	B/F ^r	2 BT	-	2 BT	42.5 cm 879 g
11							34.5 cm 546 g
12	0.5	L	B	-	-	0	
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

* see next page

Gantahaz Lake Creel Survey

February 6, 1993

Weather: Light overcast; low wind; slice ice covered by 2 8cm wet snow
Temperature 2 C

Angler interview 1:

- this is his first time ice fishing, and can offer no opinion about this lake.
- this is a convenient place to fish.

Angler interview 2:

- fishing is the same throughout the winter.
- fishing is best between 08:00 and noon.
- fishing used to be good on this lake.
- this is a convenient place to fish.

Angler interview 3:

- this angler has been interviewed by me during a previous session.
- five years ago anglers could pull out their limit, but fishing has tapered off over the last several years.
- this angler has caught nothing in the past three weeks, but has spent close to 10 hours a week trying.
- would like to see fishing closed during spawning because many people are snagging too many fish.

Angler interview 4:

- this is this angler's first time ice fishing, and can offer no opinion about this lake.

Angler interview 5:

- this angler has only ice fished once on this lake and can offer no opinion about this lake.

Angler interview 6:

- this is this angler's first time ice fishing on this lake and can offer no opinion about this lake.
- usually fishes Morfee Lake, but is here because Morfee is quite slow.

Angler interview 7:

- this angler is new to town and has never ice fished here before, and can offer no opinion about this lake.

Angler interview 8:

- this angler has been interviewed by me during a previous session,

February 6, 1993 Con't

Angler interview 9:

- this angler has been interviewed by me during a previous session.

* Angler interview 10:

- this angler has been interviewed by me during a previous session,
- this angler started with shrimp as bait, but for fun tried a fly, and promptly caught his 2 fish.

Angler interview 11:

- this angler has only ice fished once this year, and only comes out once or twice each winter, and can offer no opinion about this lake.

NOTES:

- all anglers were interviewed.
- 7 people came down to the lake for a walk.
- 3 snowmobilers used the lake.
- 4 vehicles drove down to the boat launch and left.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93

D.C. ENVIRONMENT

page 1 of 1

RECEIVED
PRINCE GEORGE, B.C.

Date: Feb. 11/93

Location: Boat launch site

Creel Clerk: Ex.

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel. (indicate species)	Total Catch	Len/wght for each fish killed
1	2	L	E	/	/	ROSE	
2	1	L	E	/	/	ROSE	
3	1	L	E	/	/	ROSE	
4	1	L	E	/	/	ROSE	
5	1	L	E	/	/	ROSE	
6	1	L	E	/	/	ROSE	
7	1	L	E	/	/	ROSE	
8	1	L	E	/	/	ROSE	
9	1	L	E	/	/	ROSE	
10	1	L	E	/	/	ROSE	
11	1	L	E	/	/	ROSE	
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT

Lake white fish - LWF

Temp: -9°C

Wind: still

Sky: clear

Holds: 8:45 - 16:45

NO anglers interviewed 2-1 angler was interviewed previously

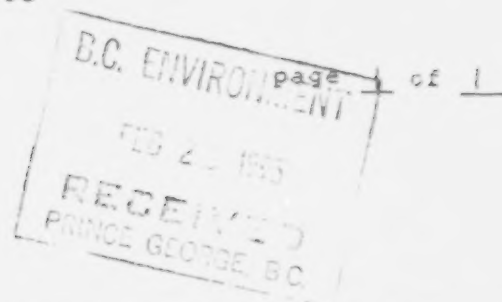
-10 anglers were ≈ 10 year old

children on a school outing.

1 vehicle came to park immediately

* snow on lake melted + froze leaving lake surface
like a skating rink - in fact 4 people came
down + skated on the lake.

GANTAHAZ LAKE
WINTER CREEL SURVEY
1992/93



Date: Feb. 13 1993

Location: Boat launch site

Creel Clerk: E. Rogers

No	Hrs Fished	Angler Origin	Gear	No. Killed	No. Rel.	Total Catch	Len/wght for each fish killed
1	4.5	L	B	1	NONE	1	1
2	4	L	B	—	—	NONE	—
3	4	L	B	—	—	NONE	—
4	4	L	B	—	—	NONE	—
5	1	R	H	—	—	NONE	—
6	1	L	B	—	—	NONE	—
7	0.75	L	B	—	—	NONE	—
8	0.75	L	B	—	—	NONE	—
9	0.75	L	B	—	—	NONE	—
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Brook trout - BT
Lake white fish - LWF

Temp.: -7°C

Wind: low

Sky: cloudy

Hours: 8:30-16:30

④ ~~the~~ vehicles came/left immediately

② anglers interviewed said that morning was the best time & that fishing was good & they were at this lake because it was convenient. No opinions on best month.

② anglers stated that fishing was fair and they were ~~there~~ here because the lake was convenient. No opinions on best month.

① angler said that afternoon was the best time & fishing was good. They were there because the lake was close to town. February is the best month.

① angler said morning is best time & fishing is poor. Lake convenient to town. No opinions as to best month.

Location: Goldens Lake month: December strata: Wetlands/Habitat (2, 2) Monthly raw data Summary

Residency	Numbers of Anglers							TOTAL
	a	b	c	d	e	f	g	
DATE								X
LOCAL	1	0						1
RESIDENT	0	0						0
NON-RESIDENT	0	0						0
NON-CANADIAN	0	0						0

Numbers of Hours							TOTAL
a	b	c	d	e	f	g	
							X
1.5	0						1.5
0	0						0
0	0						0
0	0						0

Killed Catch (K)							TOTAL
a	b	c	d	e	f	g	
2	0						X
-	-						-
-	-						-
-	-						-
-	-						-

Released Catch (R)							TOTAL
a	b	c	d	e	f	g	
2	0						X
-	-						-
-	-						-
-	-						-
-	-						-

TOTAL	1	0						1
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1.5	0							1.5
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0	0							0
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Number of Anglers							TOTAL
a	b	c	d	e	f	g	
1	-						1
FLY	-						0

1.5	-							1.5
-	-							0

-	-							0
-	-							0

0	0							0
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Totals by residency must equal totals by gear type. All numbers must add across and down before going to next step.
number needed = 4 strata, 5 months → 20

I Location: Cordoba Lake month: January

Strata: Weekdays Feb 20 11 monthly raw data Summary

P.C. DIVISION

PRINCE GEORGE, B.C.

Residency	Numbers of Anglers						TOTAL
	a	b	c	d	e	f	
DATE	6	11	20	20			X
LOCAL	1	2	3	4			10
RESIDENT	-	-	-	-			0
NON-RESIDENT	-	2	-	-			2
NON-CANADIAN	-	-	-	-			0

TOTAL	1	4	3	4			12
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Number of Anglers						TOTAL
WIND-UP	1	4	3	4		
FLY	-	-	-	-		0
TOTAL	1	4	3	4		12

Numbers of Hours						TOTAL
a	b	c	d	e	f	
6	11	20	20			X
5.5	3.0	6.5	6.5			14.5
-	-	-	-			0
-	5.0	-	-			5.0
-	-	-	-			0

TOTAL	5.5	3.0	6.5	6.5			24.5
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Number of Hours						TOTAL
WIND-UP	1	4	3	4		
FLY	-	-	-	-		0
TOTAL	5.5	3.0	6.5	6.5		24.5

Killed Catch (K)						TOTAL
a	b	c	d	e	f	
6	11	20	20			X
-	0	2	-			2
-	-	-	-			0
-	4	-	-			4
-	-	-	-			0

TOTAL	0	4	2	0			6
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Killed Catch						TOTAL
WIND-UP	1	4	2	-		
FLY	-	-	-	-		0
TOTAL	0	4	2	0		6

Released Catch (R)						TOTAL
a	b	c	d	e	f	
6	11	20	20			X
-	-	-	1			1
-	-	-	-			0
-	-	-	-			0
-	-	-	-			0

TOTAL	0	0	0	1			1
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Released Catch						TOTAL
WIND-UP	1	4	2	-		
FLY	-	-	-	-		0
TOTAL	0	0	0	1		1

Totals by residency must equal totals by gear type. All numbers must add across and down before going to next step.
 Number needed = 4 strata, 5 minutes → 20

U.S. ENVIRONMENT

Monthly raw data Summary

State: Alaska

Month: January

Location: Central Lake

Jury	Numbers of Anglers							TOTAL
	a	b	c	d	e	f	g	
DATE	7	3	11	14				35
RESIDENT								0
NON-RESIDENT								1
NON-CATCH								0

Jury	Numbers of Hours							TOTAL
	a	b	c	d	e	f	g	
DATE	10.25	11.0	12.5	14.5				16.5
RESIDENT								0
NON-RESIDENT								1.5
NON-CATCH								0

Jury	Killed Catch (K)							TOTAL
	a	b	c	d	e	f	g	
DATE	3	16	17	30				17
RESIDENT								0
NON-RESIDENT								0
NON-CATCH								0

Jury	Released Catch (R)							TOTAL
	a	b	c	d	e	f	g	
DATE	3	16	17	30				0
RESIDENT								0
NON-RESIDENT								0
NON-CATCH								0

TOTAL	7	3	12	14				36
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Number of Anglers

DATE	7	3	12	14				36
RESIDENT								0
NON-RESIDENT								0
NON-CATCH								0

TOTAL	10.25	11.0	12.5	14.5				16.5
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Number of Hours

DATE	10.25	11.0	12.5	14.5				16.5
RESIDENT								0
NON-RESIDENT								1.5
NON-CATCH								0

TOTAL	0	3	5	9				17
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Killed Catch

DATE	0	3	5	9				17
RESIDENT								0
NON-RESIDENT								0
NON-CATCH								0

TOTAL	0	0	0	0				0
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Released Catch

DATE	0	0	0	0				0
RESIDENT								0
NON-RESIDENT								0
NON-CATCH								0

Totals by residency must equal totals by gear type. All numbers must add across and down before going to next step.
 minor needed = 4 states, 5 months → 20

Location: Cashew Lake

Month: February

State: Washington

Monthly raw data Summary

Residency	Number of Anglers							TOTAL
	a	b	c	d	e	f	g	
DATE	2	11						X
LOCAL	3	11						14
RESIDENT	-	-						0
NON-RESIDENT	-	-						0
NON-CANADIAN	-	-						0
TOTAL	3	11						14

Number of Hours							TOTAL
a	b	c	d	e	f	g	
2	11						X
10	120						140
-	-						0
-	-						0
-	-						0
10	120						140

Killed Catch (K) PRINCIPAL SPECIES							TOTAL
a	b	c	d	e	f	g	
2	11						X
1	-						1
-	-						0
-	-						0
-	-						0
1	0						1

Released Catch (R)							TOTAL
a	b	c	d	e	f	g	
2	11						X
1	-						1
-	-						0
-	-						0
-	-						0
1	0						1

TOTAL	3	11						14
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Number of Anglers							TOTAL
a	b	c	d	e	f	g	
3	11						14
FLY	-	-					0
TOTAL	3	11					14

Number of Hours							TOTAL
a	b	c	d	e	f	g	
10	120						140
-	-						0
10	120						140

Killed Catch							TOTAL
a	b	c	d	e	f	g	
1	-						1
0	-						0
1	0						1

Released Catch							TOTAL
a	b	c	d	e	f	g	
1	-						1
0	-						0
1	0						1

Totals by residency must equal totals by gear type. All numbers must add across and down before going to next step.
 Number needed = 4 struts, 5 months → 20

D.C. ENVIRONMENT

I Location: Captain's Lake

month: February

State: Delaware / Adopt 15 2 Monthly raw data Summary

Residency	Numbers of Anglers							TOTAL
	a	b	c	d	e	f	g	
DATE	6	13						X
LOCAL	11	8						19
RESIDENT	-	1						1
NON-RESIDENT	-	-						0
NON-CANON	-	-						0

TOTAL	11	9						20
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Gear Type	Number of Anglers							TOTAL
	a	b	c	d	e	f	g	
Worm	10	8						18
FLY	1	-						1
Other	-	1						1

TOTAL	11	9						20
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Numbers of Hours								TOTAL
	a	b	c	d	e	f	g	
6	13							X
22	15							41.75
-	10							10
-	-							0
-	-							0

22	15							41.75
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Number of Hours								TOTAL
	a	b	c	d	e	f	g	
17.5	15							32.5
3.5	-							3.5
11	0							11

22	15							37.5
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Killed Catch (K)								TOTAL
	a	b	c	d	e	f	g	
6	13							X
2	-							2
-	-							0
-	-							0
-	-							0

2	0							0
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Released Catch								TOTAL
	a	b	c	d	e	f	g	
-	-							0
2	-							2
-	-							0

2	0							2
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Totals by residency must equal totals by gear type. All numbers must add across and down before going to next step.
Number needed - 4 State, 5 months → 20